

upon the cockle industry are both interesting and important.

The volume contains several plates and woodcuts, and is in paper covers. The education committee of the Lancashire County Council provided funds for the instruction of fishermen at the Piel hatchery, and forty-five fishermen attended the class which was held in the spring by Mr. James Johnstone. A "Syllabus of the Lessons in Marine Biology given in the Practical Classes for Fishermen" has been revised, and is now published as a separate volume. It is difficult to estimate the value to the fishermen of the benefit to be derived from a superficial knowledge of marine biology, but the value to the laboratory no doubt lies in the fact that the men send in specimens of animals and plants taken in the course of their fishing operations.

The Danish fishery and hydrographical contributions to the international North Sea fisheries investigations,¹ lately issued, include two papers dealing with fishery matters, one by Mr. Johs. Schmidt being concerned with the pelagic post-larval stages of the two species of halibut *Hippoglossus vulgaris*, Flem., and *H. hippoglossoides* (Walb.). Mr. Schmidt points out that the best distinction between these two species is not in the number of fin-rays, but in the number of vertebrae, and he found certain post-larval fishes off Iceland and the Færøe Islands which agreed in the number of vertebrae with the adults of *H. vulgaris*. The material from which he determined the young stages of *H. hippoglossoides* was taken by the Danish Ingolf Expedition.

The other fishery paper is by Dr. A. C. Johansen, and is entitled "Contributions to the Biology of the Plaice with Special Regard to the Danish Plaice Fishery," and is the first report published upon the subject. The paper is exceedingly interesting, the results, chiefly in regard to the growth and migrations of the plaice, having been obtained by recording the length of a number of fish, marking them with a label, and returning them to the sea to be caught later on by one of the numerous fishing boats. A fair percentage of the fish have been recovered, and by re-measuring these fish their rate of growth during the time between their marking and re-capture has been determined. An interesting part of this experiment was the transplanting of fish from one ground to another, by which it was found that on some grounds they would grow three or four times as rapidly as upon other grounds. Experiments upon the same lines have been carried out by the English staff with similar results, but the official English report is not yet published. The marking experiments have also shown that in Danish waters there are decided migrations of plaice at different times of the year, the tendency being for the fish to work into shallower water during the spring and into deeper water during the autumn.

Dr. Martin Knudsen contributes a paper upon the hydrography of the North Atlantic Ocean, while Mr. J. N. Nielsen writes upon the hydrography of the waters of the Færøe Islands and Iceland during 1903. In both these papers we should have liked to see either an introduction stating the objects of the investigation or a summary of results, as, to those who are not hydrographers, the results obtained are not very clearly set forth. It is perhaps too early to attempt to connect the observed physical phenomena with the movements of the fish, but no doubt, as more material comes to hand, the biological results of the international investigations will be shown to be closely dependent upon the physical conditions observed by the hydrographical staff.

A paper by Mr. Neils Bjerrum, on the determination of oxygen in sea-water, is bound in with Mr. Nielsen's paper already referred to. Mr. Bjerrum has adopted a method of "preserving" the water samples taken in mid-ocean until they can be accurately analysed on land, and it appears that his method of adding to the water samples a solution of manganous chloride and caustic soda containing iodide of potassium has been very satisfactory.

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¹ Meddelelser fra Kommissionen for Havundersøgelser. (Copenhagen, 1904-5.)

UNIVERSITY AND EDUCATIONAL INTELLIGENCE.

OXFORD.—A statute was brought before Congregation on June 6 to provide a delegacy to superintend the instruction of candidates for the Indian Forest Service, and to grant diplomas in forestry. The proposal to establish a diploma in forestry in the university has arisen from the recent decision of the Secretary of State for India to send the Indian forestry students, hitherto trained at the Coopers Hill Engineering College, to receive their special training in forestry at Oxford. Those students under the regulations just issued by the India Office will be selected by a competitive examination held by the Civil Service examiners every summer. They must be natural born British subjects of not less than eighteen or more than twenty years of age on the January 1 before their selection. They will be required, before becoming candidates, to have passed Responsions or an equivalent examination. The subjects of the competitive examination will be:—(1) mechanics and physics; (2) chemistry; (3) zoology; (4) botany.

After selection the students will be probationers for about three years. For the first two years they will be required to study at Oxford, and their course will include theoretical and practical forestry, and subjects auxiliary to forestry, viz. organic chemistry and the chemistry of soils, geology, forest botany, forest entomology, mathematics, German, and book-keeping. During the third year of probation they will receive practical instruction, visiting Continental forests under suitable supervision. The first competitive examination will be held on August 29 for the selection of not less than nine candidates. Applications for admission must be made to the India Office by July 1.

The Junior Scientific Club gave a conversazione in the museum on Tuesday, May 30, at which more than a thousand visitors were present. Lectures and demonstrations were given by Prof. Poulton, Dr. Tutton, Dr. Brereton Baker, and Mr. E. P. Poulton, and there were a large number of scientific exhibits.

The Robert Boyle lecture for 1905 was given by Sir Victor Horsley on Monday, June 5, in New College Hall. The subject of the lecture was "The Cerebellum."

CAMBRIDGE.—A little pamphlet has just been published on the authority of the Vice-Chancellor containing the names of all those who voted on the report of the examinations and the way they voted. An analysis of the poll shows that amongst the resident members of the university 288 voted in favour of allowing a substitute for Greek in the previous examination and 240 against. Thus the residents had, out of a total of 528 votes, the substantial majority of 48; they were, however, swamped by the non-resident vote. Only four colleges, King's, Christ's, Trinity, and Downing, showed a majority amongst both residents and non-residents in favour of the proposed change.

Prof. Lewis gives notice that a course of lectures and demonstrations in crystallography will be given in the mineralogical lecture-room during the long vacation, beginning at 9 a.m. on Friday, July 7.

The observatory syndicate has reported upon the management of the sum of 5000*l.* bequeathed by the late Mr. Frank McClean for "improving the instrumental equipment of the Newall Observatory." It recommends that the sum be invested, and that the disposal of both the interest and, if advisable, the capital, be in the hands of the syndicate, and that the accounts be annually audited and published with the university accounts.

The special board of medicine has drafted ordinances which, if they pass the Senate, will allow a candidate for the M.B. or M.D., if resident abroad, to take his degree *in absentia*.

THE annual conversazione of University College, London, will be held on the evening of Wednesday, June 28. There will be scientific and other exhibits illustrating the work of the various departments of the college.

MR. E. BROWN, lecturer on applied mechanics at the University of Liverpool, has been appointed assistant professor in civil engineering and applied mechanics in the McGill University at Montreal.

DR. J. E. DUERDEN, of the University of Michigan, formerly curator of the museum, Jamaica, has been appointed professor of zoology at the Rhodes University College, Grahamstown, Cape Colony.

A COURSE of eight lectures in advanced zoology on "The Prosobranchiate Mollusca" is being given in connection with the University of London in the lecture room of the Chelsea Physic Garden by Mr. J. E. S. Moore on Mondays and Thursdays during June. There is no fee for the course; cards of admission and a detailed syllabus may be had on application to the academic registrar, University of London, South Kensington, S.W.

THE King has approved the charter for the constitution of the University of Sheffield. On June 3 the Pro-Chancellor formally handed over the charter to the Vice-Chancellor, Dr. Hicks, F.R.S., and congratulatory speeches were made. The King and Queen have consented to open the new university buildings in July. An endowment fund of about 140,000*l.* has been raised in Sheffield, and the City Council and the councils of neighbouring boroughs and counties have guaranteed annual rate aid equivalent to an even larger capital sum. The first Chancellor of the university is the Duke of Norfolk.

WE learn from *Science* that Prof. Asaph Hall, jun., has resigned the professorship of astronomy and directorship of the observatory at the University of Michigan. Prof. W. T. Hussey, of the Lick Observatory, has been elected his successor. Prof. S. J. Barnett, of Stanford University, has accepted the chair of physics at Tulane University, vacant by the resignation of Dr. Brown Ayres to accept the presidency of the University of Tennessee. At Williams College, Mr. W. E. McElfresh has been promoted to the Thomas T. Reed professorship of physics, and Mr. H. L. Clelland to a professorship in geology. M. Gabriel Bertrand has been appointed to succeed the late M. Duclaux as lecturer on biological chemistry at the Paris Faculty of Science.

It is announced, *Science* states, that 360,000*l.* has been contributed toward the endowment of 500,000*l.* which is being collected to increase the present amount available for the salaries of the teaching staff of the college of Harvard University. The circular which appeals for additional subscriptions says:—"The position of Harvard to-day among American universities is due not so much to its age, traditions, or able administration as to its noble line of teachers. That the teachers in the college should be the best in the land; that the older professors should be free from the cares of a straitened income; that the younger teachers should be able to give themselves without distraction to their work, and that the best men should not be drawn away to other colleges, but should see before them reasonable promotion in work and salary, is essential to the leadership of Harvard and the culture of her sons." It is pointed out that the total of salaries in Harvard College is about 87,600*l.*, and the average per capita allowance for the staff of 279 teachers is only 314*l.*

An article entitled "Some Candid Impressions of England" is contributed to the current number of the *National Review* by a "German Resident." The first fact which strikes the contributor is the indifference of Englishmen to their individual duties as citizens of a great Empire, and it seems to him, looking at English schools, that the mainspring of German success is here. He says:—"Our youths, like your youths, are human, and would be lazy if there were no penalty for idleness. But the fact that those who are negligent and lazy at school have to put in an extra year of service, acts as a stimulus and compels the German boy to work, where the English boy spends his time in play." In another place:—"I look at England and see the want of such an influence even in your public schools, which are good in a way, so far as they form character, but bad in that they neglect intellect." As for our primary education, its product seems to the critic surprisingly bad. He says the knowledge imparted in our

elementary schools does not seem to be such as is required for the making of good citizens. The majority of our workers, he remarks, read little but the sporting Press, and care for little but betting and sport. It is pointed out that the Germans have destroyed in this generation the superstition that Germany makes only poor and cheap articles. "Our Mercedes motors and scientific and optical instruments are the best and most expensive in the world, and no English article of their class can for a moment compete with them."

THE annual report of the council of the City and Guilds of London Institute was adopted at the yearly meeting of the institute held on June 1. The council directs attention to the diminished income of the institute, owing to the fact that the Mercers' Company, the Fishmongers' Company, and the Corporation have made reductions in their contributions. No reason, it is said, has been assigned for these reductions. At the invitation of the Lord Chancellor, a meeting of the representatives of the principal companies has been held to discuss the situation, and a resolution has been passed expressing a hope that the livery companies will increase, rather than diminish, their subscriptions. The total income for the past year, including donations for special purposes, amounted to 43,432*l.*, of which the Corporation and the livery companies contributed 23,308*l.*, the remainder coming from fees and other receipts. In the previous year the income was 46,829*l.*, of which the Corporation and livery companies contributed 29,385*l.* Sir John Wolfe Barry, in his speech moving the adoption of the report, alluded to an interview with the chairman of the Departmental Committee on the Royal College of Science, South Kensington. He gathered that the general idea of the scheme which will be submitted to the council of the institute is a federation or coordination of all the teaching institutions which are gathered round about South Kensington, and when this takes place the institutions will be in intimate connection with the university. It is held that a system of this kind will be a very great benefit, not only to the general teaching given, but also to post-graduate teaching, which will be largely developed, it is hoped, in the future.

THE report of the Commissioner of Education for the year 1903 has now been published by the United States Bureau of Education. It contains in its 1327 pages an abundance of information concerning all grades of American education, and parts of the educational systems of other countries. It is only possible here to refer to a few of its contents. Dr. Charles F. Thwing, president of Western Reserve University, contributes a chapter on the development of American universities, their organisation, conduct, and relations to the life of the nation. The chapter shows that the growth of university endowment funds has kept pace in the United States with that of the wealth of the country at large. For example, the productive funds of Yale College have increased from about 6000*l.* in 1830 to more than 1,000,000*l.* at the present time. The growth of libraries also has been significant in particular instances, yet Dr. Thwing says the "libraries of most colleges are inadequately furnished and inefficiently administered." The functions of universities in American communities are considered under various aspects. First, as conserving forces in the presence of a democracy inclined to make all things new; then as inspiring with high moral ideals an age inclined to pursue mere material aims. As an agency to promote systematic research—the seeking after truth as such—the university fulfils an increasingly useful function. It presents, as the chapter points out, materials for the study of all truth, in the world of nature and in the world of man. Another chapter of the report deals with education in France, and includes some interesting statistics concerning French universities. It appears that the registration in State universities has increased by about 60 per cent. since 1887, the total registration for 1901 being 29,931 students. The University of Paris greatly outnumbers all others in this respect, its total registration being 12,289 students. Lyons, with 2458 students, and Bordeaux, with 2119, stand next to Paris. As the distribution by faculties, law leads with 10,152 students, medicine follows with 8627, science comes third with 3910 students, and is closely followed by the faculties of letters with 3723 students.